

What is claimed is:

- 1     1.     A method comprising:  
2             calculating link margin for a wireless device using a received power level  
3     indication and receiver sensitivity indication; and  
4             adjusting at least one of transmit data rate and transmit power level for the  
5     wireless device based on link margin.
  
- 1     2.     The method of claim 1, wherein:  
2             said wireless device is a wireless client device for use in a wireless network; and  
3             said received power level indication includes a received power level (RPL)  
4     value.
  
- 1     3.     The method of claim 1, wherein:  
2             calculating includes determining a difference between said received power level  
3     indication and said receiver sensitivity.
  
- 1     4.     The method of claim 1, wherein:  
2             adjusting includes selecting a transmit data rate by determining which of a  
3     plurality of ranges said link margin falls within.
  
- 1     5.     The method of claim 1, wherein:  
2             adjusting includes entering a power reduction loop when said link margin  
3     exceeds a predetermined level.
  
- 1     6.     The method of claim 1, further comprising:  
2             determining receiver sensitivity, before calculating link margin, based on a data  
3     rate of a received signal.
  
- 1     7.     The method of claim 6, wherein:  
2             said received signal is a received beacon signal.

1     8.     The method of claim 1, wherein:  
2             adjusting includes selecting a maximum data rate and decreasing a transmit  
3     power level when said link margin exceeds a predetermined value.

1     9.     A wireless device comprising:  
2             a wireless transceiver;  
3             a link margin determination unit to determine a link margin associated with the  
4     wireless transceiver; and  
5             a transmit data rate determination unit to select a transmit data rate for the  
6     wireless transceiver based on link margin.

1     10.    The wireless device of claim 9, wherein:  
2             said transmit data rate determination unit selects said transmit data rate by  
3     determining which of a plurality of link margin ranges said link margin falls within.

1     11.    The wireless device of claim 10, wherein:  
2             said transmit data rate determination unit selects a maximum data rate when  
3     said link margin exceeds a predetermined value.

1     12.    The wireless device of claim 9, further comprising:  
2             a transmit power determination unit to adjust a transmit power level of the  
3     wireless device based on link margin.

1     13.    The wireless device of claim 12, wherein:  
2             said transmit power determination unit enters a power reduction loop when said  
3     link margin exceeds a predetermined level.

1 14. The wireless device of claim 9, wherein:  
2 said link margin determination unit determines said link margin by calculating a  
3 difference between a received power level indication and a receiver sensitivity of said  
4 wireless transceiver.

1 15. The wireless device of claim 14, wherein:  
2 said receiver sensitivity is estimated based upon a receive data rate.

1 16. The wireless device of claim 14, wherein:  
2 said wireless device is a wireless client device for use within a wireless local  
3 area network; and  
4 said received power level indication includes a received power level (RPL)  
5 value.

1 17. An article comprising a storage medium having instructions stored thereon that,  
2 when executed by a computing platform, result in:  
3 calculating link margin for a wireless device using a received power level  
4 indication and receiver sensitivity indication; and  
5 adjusting at least one of transmit data rate and transmit power level for the  
6 wireless device based on link margin.

1 18. The article of claim 17, wherein:  
2 calculating includes determining a difference between said received power level  
3 indication and said receiver sensitivity.

1 19. The article of claim 17, wherein:  
2 adjusting includes selecting a transmit data rate by determining which of a  
3 plurality of ranges said link margin falls within.

1   20.    The article of claim 17, wherein:  
2           adjusting includes entering a power reduction loop when said link margin  
3   exceeds a predetermined level.

1   21.    A wireless device comprising:  
2           at least one dipole antenna;  
3           a wireless transceiver coupled to said at least one dipole antenna;  
4           a link margin determination unit to determine a link margin associated with the  
5   wireless transceiver; and  
6           a transmit data rate determination unit to select a transmit data rate for the  
7   wireless transceiver based on link margin.

1   22.    The wireless device of claim 21, wherein:  
2           said transmit data rate determination unit selects said transmit data rate by  
3   determining which of a plurality of link margin ranges said link margin falls within.

1   23.    The wireless device of claim 21, further comprising:  
2           a transmit power determination unit to adjust a transmit power level of the  
3   wireless device based on link margin.

1   24.    The wireless device of claim 21, wherein:  
2           said at least one dipole antenna includes multiple dipole antennas in an antenna  
3   diversity arrangement.

1   25.    A method comprising:  
2           selecting a transmit data rate for a wireless transceiver based on a calculated link  
3   margin; and  
4           entering a power reduction loop to reduce a transmit power level of said  
5   wireless transceiver when said calculated link margin exceeds a predetermined level.

1   26.    The method of claim 25, wherein:  
2           selecting a transmit data rate includes determining which of a plurality of ranges  
3   said link margin falls within.

1   27.    The method of claim 25, wherein:  
2           selecting a transmit data rate includes selecting a maximum data rate when said  
3   calculated link margin exceeds said predetermined level.

1   28.    The method of claim 27, wherein:  
2           said maximum data rate is user specified.

1   29.    The method of claim 25, wherein said power reduction loop includes:  
2           reducing a transmit power level by a first predetermined amount and  
3   transmitting a signal;  
4           determining whether an acknowledgement signal has been received in response  
5   to transmitting said signal; and  
6           when an acknowledgement signal has been received in response to transmitting  
7   said signal, repeating reducing and determining.

1   30.    The method of claim 29, wherein said power reduction loop further includes:  
2           when an acknowledgement signal has not been received in response to  
3   transmitting said signal, increasing said transmit power level by a second predetermined  
4   amount.